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09/915,166	07/25/2001	Joseph Robert Stetter		6224

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EXAMINER

OLSEN, KAJ K

ART UNIT PAPER NUMBER

1753

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/915,166

Applicant(s)

STETTER, JOSEPH ROBERT

Examiner

Kaj Olsen

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 2-15 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-29 is/are allowed.
- 6) ☒ Claim(s) 1 and 16-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 2-15 remain withdrawn from consideration. The previous election requirement is still deemed proper and is therefore made FINAL.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 16-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 1 explicitly specifies the presence of three electrodes. However, in dependent claim 16, applicant attempts to further limit the apparatus of claim 1 by specifying that two of those electrodes take the form of a single electrode. This is improper. Applicant clearly specified that there must be three electrodes in the independent claim. Although the examiner appreciates what the applicant is attempting to do here (i.e. the examiner is familiar with the practice of combining the function of the counter and reference electrodes into a single electrode), it is still impermissible to clearly specify three electrodes and further specify that there are only two electrodes. Apparatus claims are interpreted based on their structure and not on the function of that structure. Hence, claim 1 specifies that there must be three structurally distinct electrodes whereas claim 16 states that only two structurally distinct electrodes need be present. That makes the dependent claim broader than the claim from which it depends. If

applicant wishes to have claims drawn to both two and three electrode embodiments, applicant can either initially only claim two electrode and further limit the invention by specifying a third electrode, or applicant can have separate independent claims drawn to the two and three electrode embodiments of the invention. For the purpose of examination, the examiner will interpret claim 1 as being drawn to either a two or three electrode configuration, but correction is required.

5. In claim 22, applicant's amendment is confusing because it is unclear if the reference and counter electrodes are part of the claimed invention. Applicant only specifies that the working electrode are connected to the reference and counter electrodes without clearly establishing the presence of the counter and reference electrodes. For the purposes of examination, the examiner will interpret the reference and counter electrodes as being part of the claimed invention (however, see discussion above about claiming counter and reference electrodes above).

6. Claim 22 is further confusing because applicant specifies that each of the working electrodes are connected to "its" counter and reference electrodes. Is applicant specifying a separate counter and reference electrode for each of the individual working electrodes? Clarification is requested.

### *Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Connery et al (USP 4,076,596).

9. These claims are anticipated by the reference for the reasons set forth in the previous office action. Applicant has traversed this rejection on a number of grounds. In particular, applicant urges that the cited patent does not disclose a "means for preventing or minimizing the occurrence of said analyte reaction or any interfering gas at said counter electrode and/or reference electrode". This is not persuasive because it is not true. The choice of electrolyte of Connery is based on the chosen analyte to be determined. See col. 7, lines 45-49. Interfering species that cannot be generated by that choice of electrolyte would not react with specified electrodes. Because the sensor is designed to produce its signal from the reaction of the electrolyte, any interferent incapable of being generated by the electrolyte is "minimized" given the claim language its broadest reasonable interpretation. Hence the configuration of Connery would read on the means of claim 1.

10. Applicant also urges that there is no mention of reconversions or of amplification of the measurement signal. This argument is persuasive and the examiner has withdrawn the rejections of claims 18-21, 25, and 26. The rejection over claims 22-24 is withdrawn in view of the applicants amendment setting forth counter and reference electrodes in addition to the two working electrodes.

11. With respect to claim 17, because Connery chose a particular metal for the counter electrode that provided the desired reactivity (as opposed to any unspecified metals not utilized), that would read on the applicants claimed "means of enhancing the reactivity of the counter

electrode". In other words, there is no baseline for what the *enhancement* is an improvement over.

12. Claims 1, 16, 17, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Toxic Gas CiTiceLs (hereafter "Citicel") (said document was published prior to 7/30/1999).

13. With respect to claims 1, 16, and 17, Citicel discloses a sensor comprising a working (i.e. sensing) electrode, a reference electrode, and a counter electrode. See figure Tox-1. Citicel also discloses the use of filters that minimize the ability of interferents from reacting at any of the electrodes including the counter and reference electrodes. See pp. Tox-16 and Tox-17. Such filters would read on applicants defined "means for preventing or minimizing the...reaction of any interfering gas at said counter electrode and/or reference electrode" giving the claim language its broadest reasonable interpretation.

14. With respect to two electrode configurations, see page Tox-2.

15. With respect to the *enhancement* of the counter electrode, see page Tox-4 and the discussion above about *enhancement* in the previous rejection.

16. With respect to claim 22 (those limitations not discussed above), see the discussion of two working electrode embodiments of the sensing apparatus on pp. Tox-10 and Tox-11. With respect to how those working electrodes are being utilized, that is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability. See the discussion about allowable subject matter for suitable ways of claiming the specified function of the working electrodes.

17. With respect to claim 23, Citicel teaches the use of working electrodes that can include both NO and NO<sub>2</sub> or Cl<sub>2</sub> and HCl (see p. Tox-7). Although Citicel does not explicitly set forth an embodiment of the two working electrode device having either of these combinations, it would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the above set forth combinations of working electrodes in order to monitor either NO or Cl<sub>2</sub> free of interference from NO<sub>2</sub> or HCl.

*Claim Rejections - 35 USC § 103*

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Citicel in view of Connery.

20. Citicel set forth all the limitations of the claim, but did not explicitly recite the use of interdigitated electrodes. However, the use of interdigitated electrodes is notoriously old in the art. In particular, Connery already showed the use of interdigitated electrodes which maximized the interaction between the various electrodes (see fig. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Connery for the apparatus of Citicel in order to maximize the interaction between the various electrodes.

***Allowable Subject Matter***

21. Claims 18-21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
22. Claims 25-29 are allowed.
23. The following is a statement of reasons for the indication of allowable subject matter:  
With respect to claims 18-21, the prior art does not disclose nor render obvious all the limitations of claim 17 and further comprising the set forth means for reconverting the analyte and reacting it again at the working electrode. With respect to claims 25-29, the prior art does not disclose nor render obvious all the limitations of claims 25 and 27 with particular attention to the step of (or means for) causing repeated oxidations and reductions of said analyte.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Thursday from 7:00 AM-4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Mr. Nam Nguyen, can be reached at (571) 272-1342.

When filing a fax in Group 1700, please indicate in the header "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of this application. This will expedite processing



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of your papers. The fax number for regular communications is (703) 305-3599 and the fax number for after-final communications is (703) 305-5408.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'Kaj K. Olsen', with a long horizontal flourish extending to the right.

Kaj K. Olsen  
Primary Examiner  
AU 1753  
December 23, 2003